

ABSTRACT

A method is provided for inducing DNA synthesis in differentiated neurons. According to certain embodiments of the invention, a method for inducing DNA synthesis in a differentiated neuron is provided that includes obtaining a vector comprising nucleic acid encoding an E2F regulator and/or an E1A regulator, wherein the vector can be used to express the nucleic acid in a differentiated neuron, and transfecting a differentiated neuron with the vector. According to certain embodiments of the invention, a method for integrating DNA encoding a desired protein in a differentiated neuron is provided that includes obtaining a vector comprising nucleic acid encoding an E2F regulator and/or an E1A regulator, wherein the vector can be used to express the nucleic acid in a neuron, obtaining DNA encoding a desired protein, and cotransfecting a differentiated neuron with the vector and the DNA encoding the desired protein such that the DNA encoding the desired protein is integrated in the differentiated neuron and the desired protein is produced.